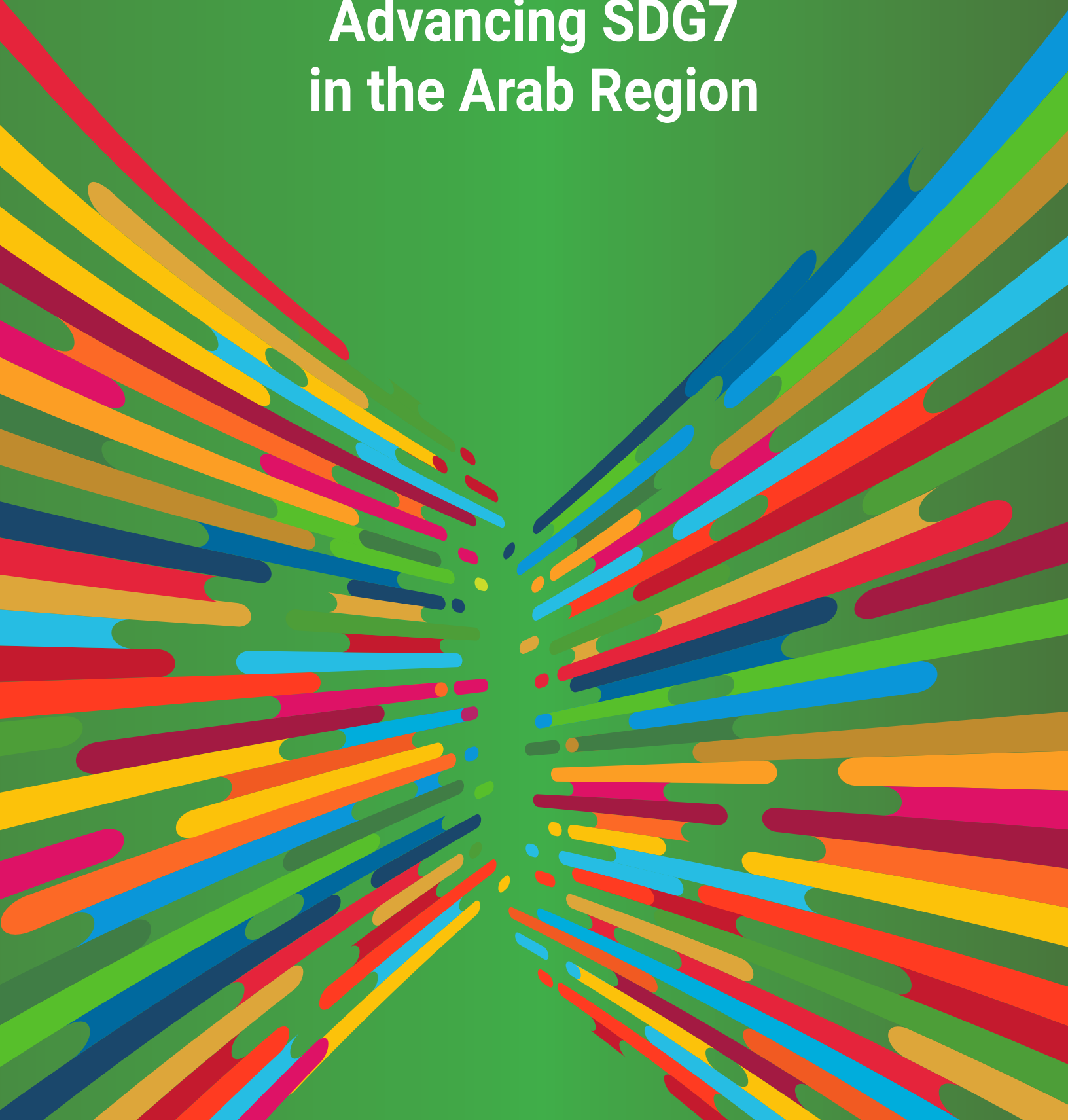
POLICY BRIEFS IN SUPPORT OF THE UN HIGH-LEVEL POLITICAL FORUM 2023

Advancing SDG7 in the Arab Region



SDG7 POLICY BRIEFS IN SUPPORT OF THE UN HLPF 2023

This document is part of a series of policy briefs compiled by the multistakeholder SDG7 Technical Advisory Group (SDG7 TAG) in support of the review of SDG7 at the High-level Political Forum (HLPF) 2023. Convened by UN DESA, the SDG7 TAG is composed of over 40 experts from governments, UN organizations, international organizations and other stakeholders. The HLPF is the central United Nations platform for the follow-up and review of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) at the global level. More information on the SDG7 TAG, including previous editiosn of the annual SDG7 Policy Briefs, is available at https://sdgs.un.org/sdg7tag

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Advancing SDG7 in the Arab Region

Contributing organizations:

United Nations Economic and Social Commission for Western Asia (United Nations ESCWA)

European Union (EU)

Food and Agriculture Organization (FAO)

International Renewable Energy Agency (IRENA)

Global Energy Interconnection Development and Cooperation Organization (GEIDCO)

KEY MESSAGES

- While the Arab region[1] has made progress recently towards achieving the Sustainable Development Goal 7 (SDG7) targets, urgent efforts are still vital if these goals are to be achieved by 2030.
- The region retains an overwhelming reliance on fossil fuels, even though some Arab countries have made substantial progress on utility-scale renewable generation. Many of these world-leading projects are set to come online in 2023, too, while five Arab countries have also pledged to achieve economy-wide net-zero emissions by 2050 or 2060.[2]
- Yet, continued supply chain disruption, economic downturns, conflict and instability in several regional countries have continued to slow overall progress with SDG7.
- This policy brief therefore recommends the following priority actions over the next three years:
- Accelerate policy action on energy access, renewables and efficiency by setting ambitious targets with wider socioeconomic objectives to enable just, inclusive, and sustainable energy transitions.
- Improve communication and awareness so that stakeholders can better understand policy choices and changing regulations, enabling them to plan accordingly.
- Increase public investment in emerging technologies in the energy sector and promote policies which encourage private sector participation by de-risking investments.
- Boost electrification across sectors – including industry, building and transport – to improve energy intensity and accelerate the uptake of renewable energy.
- Enhance linkages between energy and agrifood systems and adopt new holistic approaches, such as integrated food-energy systems and the water-energy-food-land nexus.
- Synergize interlinkages between SDG 7 and other SDGs, particularly SDG 1 on zero hunger, SDG 6 on clean water and sanitation, SDG 9 on industry, innovation, and infrastructure, SDG 11 on sustainable cities and communities, and SDG 17 on partnerships.

Furthermore, in the lead up to 2030 the following actions should also be prioritised:

- Implement and enhance national, regional and international multi-stakeholder partnerships for energy, leveraging technical assistance and expert advice to build capacity based on the lessons learned from successful global programmes.
- Enhance coordination at the national and regional level to strengthen energy governance and institutions, develop technological capacity and increase the pace of implementation of SDG7, in order to attract additional climate financing.
- Enhance Nationally Determined Contributions (NDCs) to better align with the Paris Agreement goals and establish or enhance net-zero emissions targets to de-carbonize economies by mid-century.

SUMMARY OF PROGRESS WITH SDG7

SDG7.1: Ensure universal access to electricity and clean cooking solutions

Access to electricity in the Arab region was almost 91 per cent in 2021, with many countries having reached 100 per cent.

Nevertheless, conflict, political instability and utility sector mismanagement left nearly 42 million people without electricity access that year, across the region.

Rural areas suffered the largest deficits. In these, only 83 per cent of the population had access to electricity, compared to 98 per cent in urban areas. The rural-urban divide was most prominent in the less developed countries (LDCs) of the region. In these, urban electricity access averaged 84.5 per cent, while in rural areas, it averaged only 52 per cent.

In addition, around 52 million people in Arab countries did not have access to clean cooking, with large subregional disparities.

SDG7.2: Substantially increase the share of renewable energy in the global energy mix

In the Arab region, renewable energy deployment rates continued to lag behind other regions, accounting for only 5.1 per cent of total final energy consumption in 2020.

Most renewable energy comes from traditional biomass. Electricity generation from modern renewables, however, continues to accelerate. Utility-scale solar PV projects have been especially prominent, with some of the largest projects in the world present in the region. Some of these – particularly in the Gulf Cooperation Council (GCC) countries – boast record low power prices, worldwide.

SDG7.3: Double the global rate of improvement in energy efficiency

In the Arab region, primary energy intensity is higher than the global average and is now increasing year by year, after a decade of remaining relatively flat.

Using the 2017 purchasing power parity (PPP) level of gross domestic product (GDP) as a baseline, in 2010, primary energy intensity was 5.2 megajoules (MJ) per US dollar (US$). By 2019, this level had fallen to 5.11 MJ/US$, but in 2020, this figure was 5.17 MJ/US$. Therefore, despite earlier successes, the pace of improvement has slowed and lags behind the SDG7.3 target of improving energy intensity by 2.6 per cent per year, up to 2030.

PROGRESS TOWARDS ACHIEVING SDG7

SDG7.1: Access to electricity and clean cooking solutions

Recent progress

Access to electricity

Electricity access rates in the Arab region crossed the 90 per cent mark for the first time in 2017 and continued to increase, reaching 90.8 per cent in 2021. In that year, the total number of people without access to electricity in the region stood at almost 42 million, with 89 per cent of them residing in the Arab LDCs.

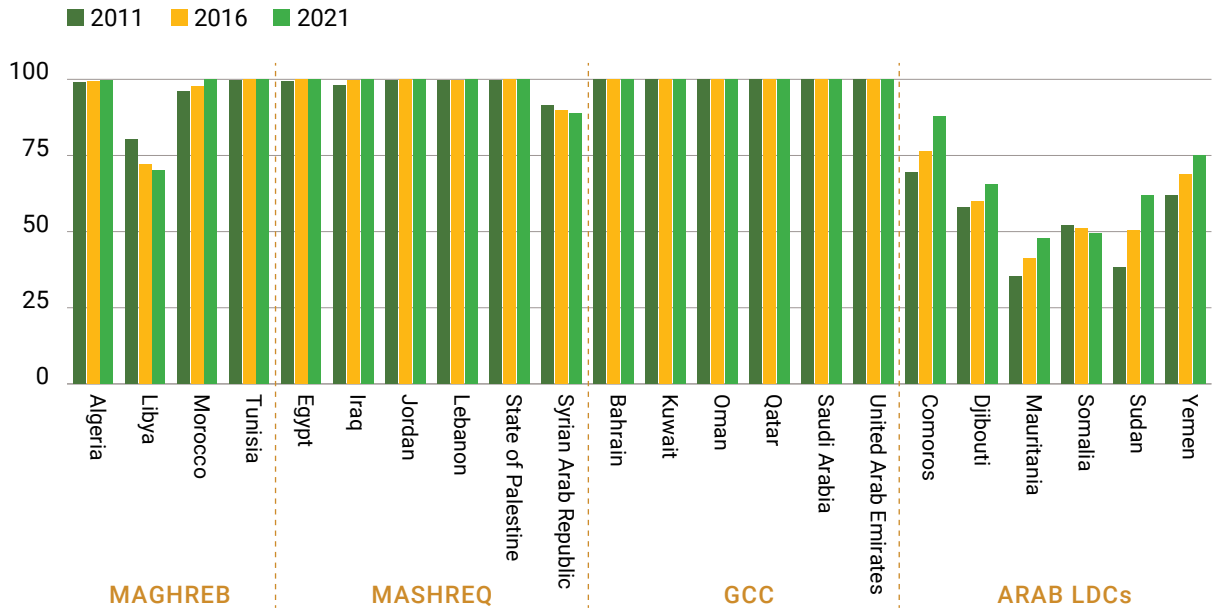
Indeed, although there has been a considerable improvement in electricity access in the Arab LDCs since 2011 – access in those countries also improved by 2 per cent annually from 2019 – access in the Arab LDCs still remains the lowest among the Arab subregions, at 63.5 per cent in 2021.

Uneven development within the region thus remains, with approximately 52 per cent, 51 per cent and 38 per cent of the populations of Mauritania, Somalia, and the Sudan still without access to electricity in 2021.[3]

Indeed, in Sudan around 17.5 million people are without access to electricity, while 8.6 million are without access in Somalia. With the addition of some 8.3 million without access in Yemen, this totals over 34 million people without access to electricity in these three countries alone. Rapid improvement is required, if these countries are to see access for all.

At the same time, all the GCC countries and most of the countries in the Mashreq region boast universal access to electricity. There has also been a slight improvement in access rates in countries in conflict, with

FIGURE 1. Share of population with electricity access in the Arab region, 2011, 2016 and 2021 (per cent)



Source: Data provided to UN ESCWA by the World Bank, 2023.

the share of people with electricity access increasing from an average of 70.4 per cent in 2011 to 76.8 per cent in 2020 and 77.5 per cent in 2021.[4]

In 2021, almost 98 per cent of the population in urban areas in the Arab region had access to electricity, while only 83 per cent of those living in rural areas did. The rural-urban divide was most prominent in the Arab LDCs. There, urban electricity access was 84.5 per cent, while in rural areas, access was only 52 per cent.[5]

Priority targets

Targeted subsidies based on household income are a viable pathway to providing energy-poor households with affordable electricity. In most cases, this will also require institutional reform and capacity building in order to help build up effective and transparent social safety systems, especially in the Arab LDCs.

Decentralized renewable energy solutions are also emerging as a cost-effective alternative to electricity from the grid. New business models to provide on-demand energy access should be implemented, especially in remote areas without grid connectivity.

The Arab region also holds great potential for electrified transport, both in the public transport segment and for private vehicles, once policy incentives and infrastructure development support this development.

Clean cooking

While 88 per cent of the population have access to clean fuels and technology for cooking in the Arab region, there are large subregional disparities. In 2021, 52 million people in the Arab region did not have access to clean cooking, a slight increase from 2019. Around 88 per cent of these people lived in Somalia, the Sudan and Yemen. Djibouti and Somalia were the countries with the highest share of their populations lacking access to clean fuels, at more than 90 per cent.[6]

The urban-rural divide is also evident for clean cooking. In the Arab region, an average 5.5 per cent of the urban population did not have access to clean cooking in 2021, while 21 per cent of rural populations suffered from a clean cooking deficit. The urban-rural divide was most evident in Mauritania, Yemen, the Sudan, and Comoros.

Priority targets

Clean cooking needs to be prioritized for implementation on the ground in countries with significant deficits in national policy. Multilateral lending agencies should partner with national governments to provide low-cost capital along with technical assistance and capacity-building based on successful global projects, as well as success stories from within the region.

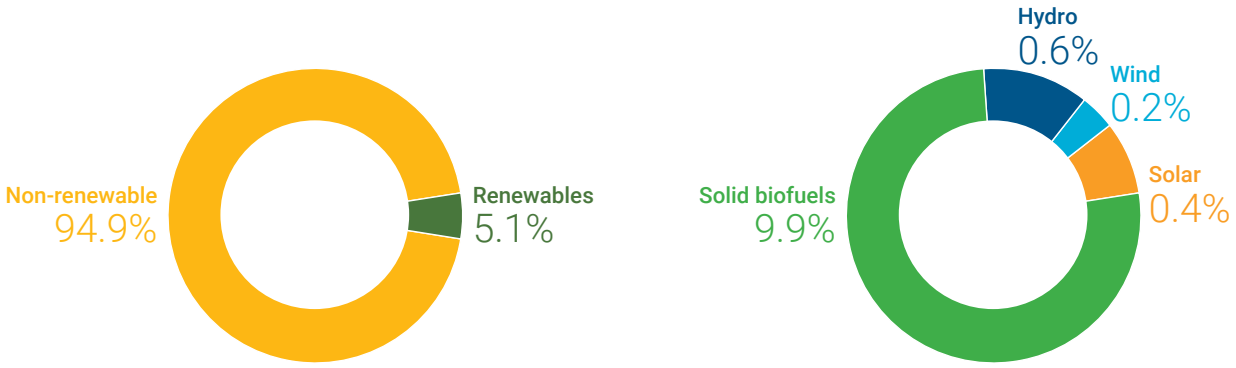
SDG7.2: Increased share of renewable energy in the global energy mix

Recent progress

In the Arab region, renewable energy penetration rates continued to lag behind other geographies. Only 5.1 per cent of the region's total final energy consumption (TFEC) was generated by renewables in 2020, with this mainly accounted for by solid biofuels. Most of these biofuels are traditional and are mainly used for cooking, heating and even lighting. They have low efficiency levels and adverse effects on health, due to indoor and other air pollution.

Three countries (the Sudan, Egypt and Somalia) accounted for 72 per cent of the region's renewable energy consumption in 2020. This came mainly from those traditional solid biofuels, which accounted for 78% of renewable energy in the region overall.

FIGURE 2. TFEC breakdown by source in the Arab region, 2020 (per cent)



Source: Data provided to UN ESCWA by the IEA, 2023.

Arab LDCs continued to be the largest consumer of biofuels, which accounted for nearly 53% of TFEC in the Arab LDCs in 2020.

In the coming decades, the share taken by biofuels is likely to fall, however, as those Arab LDCs see more modern sources of energy become increasingly accessible. The future mix in those countries will most likely be based on a combination of fossil fuels and modern renewable energy.

Total installed renewable electricity capacity in the Arab region has roughly doubled over the past decade, reaching a little over 22 gigawatts (GW) in 2021.[7] In 2020, solar and wind energy accounted for nearly 12 per cent of the region's renewable energy consumption, up from 11 per cent in 2019, with solar being the fastest growing renewable source for power generation.

Jordan, Lebanon, the State of Palestine and Yemen exhibited the highest shares of solar in their energy mix, partly driven by decentralised solutions — contrary to the regional trend. These solutions have been

BOX 1. Promoting small-scale renewable energy technologies and applications in rural areas of the Arab region

Initiatives such as the Regional Initiative to Promote Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region (REGEND) from United Nations ESCWA aim to improve the livelihood, economic benefits, social inclusion and gender equality of Arab rural communities. Such initiatives focus on particularly marginalized groups and address energy poverty, water scarcity, vulnerability to climate change and other natural resources challenges. They use appropriate small-scale renewable energy technologies to conduct productive activities. These include water pumping, food manufacturing and agricultural practices, amongst others, while supporting entrepreneurial development and ensuring women's empowerment. Their emphasis is on creating jobs and developing robust value chains.

adopted owing to a lack of capacity in grid-based electricity. Morocco, meanwhile, has been leading the way in wind energy, with 46 per cent of the region's total wind energy consumption.

The rise in renewable energy investments in the region could see capacity increase by 33 GW between 2022 and 2026, with around 26 GW as utility-scale and distributed solar.[8]

Several large utility-scale renewable energy projects are set to come online in the coming years. These include the 2.06 GW Al Shuaibah solar photovoltaic (PV) plant and the 1.5 GW Sudair solar PV plant in Saudi Arabia, as well as the 2.0 GW Al Dhafra solar PV plant in the United Arab Emirates. These are some of the largest such facilities, globally. Recently completed megaprojects include the 580 MW Ouarzazate concentrated solar power (CSP) farm in Morocco and the 200 MW Baynouna solar PV project in Jordan.

Priority targets

Modern renewable energy solutions are required to close the gap in renewable energy penetration rates between the Arab region and elsewhere. These solutions include sustainably-sourced modern biofuels, which could help the transition from traditional biomass towards other modern renewable energy solutions, or be used in hybrid systems.

Diversifying the energy mix is a key aspect of the energy transition in the Arab region. Beyond accelerating the uptake of renewables and electrifying relevant sectors, alternative energy carriers including hydrogen and hydrogen derivatives are being explored as a way to leverage the region's renewable resource potential.

Low-carbon hydrogen development could diversify Arab export revenues and reduce energy-related emissions. Such a development could also play an important role as part of a toolbox of clean energy solutions addressing the environmental and economic vulnerability to which the region is exposed. Low-carbon hydrogen development could leverage the region's natural gas resources, paired with carbon capture use and storage, while also leveraging its extensive renewable energy potential for green hydrogen.

SDG7.3: Energy efficiency improvement

Recent progress

With GDP calculated according to a 2017 PPP baseline, energy intensity in the Arab region increased from 5.11 MJ/US$ in 2019 to 5.17 MJ/US$ in 2020. Over the past decade, however, energy intensity has decreased, having stood at 5.2 MJ/US$ in 2010.

This trend was not uniform, however, as while the GCC and Mashreq sub-regions saw this decline in energy intensity, the Maghreb and Arab LDC sub-regions saw intensity increase over the same period. In the Maghreb region, energy intensity grew from 4.07 MJ/US$ in 2010 to 4.67 MJ/US$ in 2020, while the Arab LDCs witnessed an even bigger increase, from 3.27 MJ/US$ in 2010 to 4.16 MJ/US$ in 2020. Growth in energy supply was the highest in those countries in the region experiencing conflict in the 2019–2020 period, despite those countries suffering a GDP contraction.

BOX 2. Sustainable hydrogen

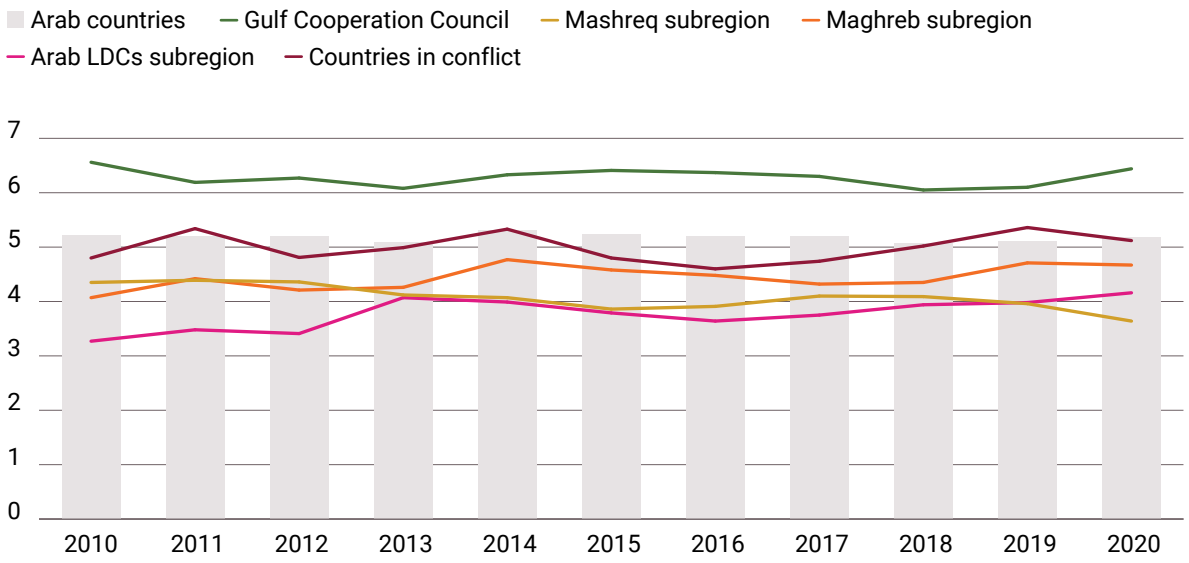
The Arab region is well placed to dominate the global export trade in sustainable hydrogen – both green and blue. By 2050, it could supply up to 20 per cent of global market demand[9] due to the low cost of renewable energy in the Arab region, experience with oil and gas exports and the region's proximity to Europe and Asia as export markets.[10]

The most appropriate near-term applications in the region are the petrochemicals and refining industries, which currently depend on grey hydrogen, steel and aluminium smelters, ammonia and methanol. In the medium to long term, large-scale seasonal energy storage, long-haul transportation and maritime shipping are prospective applications.[11]

When it comes to hydrogen use in industry, the Arab region currently dominates direct reduced iron (DRI) production using hydrogen, with 40 per cent of global production. The Al Reyadah carbon capture project in the United Arab Emirates, a DRI project with carbon capture use and storage (CCUS) launched in 2016, produces an estimated 70 kilotons (kt) annually of low-emission hydrogen. This is the only project of its type in operation today, however. No similar projects of this scale are under development.

Egypt, Mauritania, Morocco, Oman, Saudi Arabia and the United Arab Emirates all have green hydrogen projects under development. Saudi Arabia is developing an US$8.5 billion 3.5 GW green hydrogen plant at Neom which aims to produce 219 kt of hydrogen and 1200 kt of ammonia annually.[12] Mauritania recently signed a memorandum of understanding with partners in Germany, Egypt and the United Arab Emirates to develop a 10 GW green hydrogen project with an annual capacity of up to 8 million tonnes of green hydrogen and derivatives, with phase one to be completed by 2028.[13]

FIGURE 3. Arab subregion energy intensity trends, 2010–2020 (MJ/US$ at 2017 PPP GDP)



Source: Data provided by IEA.

Priority targets

With improvements in energy efficiency continually below the rate that would enable the region to meet the targets of SDG7.3, the implication is that energy efficiency (EE) policies are not yielding the desired results. This includes the performance of countries with high or upper-middle incomes – meaning that more effort is required across the region. The annual rate of improvement in EE would now need to be 3.2 per cent through 2030 to make up for slow progress in previous years.[14]

Early action on EE through well-designed and implemented EE policies can deliver multiple benefits in addition to lifetime savings of energy and greenhouse gas (GHG) emissions. Price signals also play a vital role in attracting private investments. Therefore, Arab countries need to progress with a gradual rationalization of energy subsidies. Proactive policies and regulatory incentives need to separately address energy efficiency in industry, transport and the building sector.

As part of the Saudi & Middle East Green Initiatives, the Regional Investment Fund for Circular Carbon Economy (CCE) technology is being established to advance EE innovation throughout the region. This initiative aims to reduce emissions from hydrocarbon production in the region by more than 60 per cent. Within this framework, the first phase of the region's largest CCUS hub was launched in February 2023 in Jubail, Saudi Arabia, with a capacity of 9 million tons per year of CO_2 storage capacity. The plant will scale up to a maximum capacity of 44 million tons annually by 2035.

POLICY IMPLICATIONS AND RECOMMENDATIONS

Increase public investment in energy access, renewable energy and energy efficiency

Detailed implementation plans for both on-grid and off-grid renewable access should be backed by public investments. They should also be supported by the technical and financial resources of the international community in order to achieve progress on ground. Private sector involvement will enable the scaling up of renewable energy pilot programmes and can catalyse investment in energy efficiency to provide savings across the economy.

Accelerate policy action

Governments should make energy access (including availability and affordability), renewables, and efficiency top political priorities by setting ambitious targets, plans and policies while implementing specific projects. This includes regulation to drastically improve standards of technology, fuel efficiency and economy while promoting cost-effective solutions, such as decentralised/rooftop generation.

Public communication, information and transparency must be improved so that consumers, businesses and industries understand policy choices and changing regulations and can plan accordingly. Regional cooperation over minimum standards for new technology equipment, components and vehicle standards could significantly reduce the cost to companies of improving the performance standards of their products. Region-wide, consumer information and transparency are vital in influencing demand and patterns of consumption.

Boost energy electrification

Renewable resources should be leveraged to enhance energy efficiency and promote sustainable development. By increasing electrification in sectors such as oil and gas exploration, desalination, manufacturing, transportation and residential life, energy intensity can be reduced. Governments should

create mid-term and long-term plans, set clear goals for electrification and strengthen research and development. Supportive policies, including financial subsidies and tax breaks, can encourage the growth of industries such as electric vehicles, port shore power and electric hydrogen production.

Synergize interlinkages with other SDGs

There are strong interlinkages between SDG7 and other SDGs, such as SDG1 on zero hunger, SDG6 on clean water and sanitation and SDG9 on industry, innovation and infrastructure. There are also strong links between SDG7 and SDG 11 on sustainable cities and communities and SDG 17 on partnerships. These interlinkages must be clearly identified at the regional and national levels, risks of trade-offs must be managed, impacts on gender equality must be considered and synergies between the SDGs must be harnessed to achieve multiple benefits.

Enhance the linkages between energy and agrifood systems

Investment in renewable energy solutions should be promoted, along with the adoption of new, holistic approaches. The latter include integrated food-energy systems and the water-energy-food-land nexus. These approaches can address trade-offs and leverage synergies in water and land use, while directly advancing energy and food security. They can also contribute to job creation, gender equality and building resilience to climate change.

Strengthen multi-stakeholder partnerships

Multi-stakeholder partnerships with international agencies can be leveraged to provide technical assistance and expert advice. They can also help build capacity based on lessons learned from successful global programmes. Collaborative decision-making processes and programmes involving local actors such as non-governmental organizations (NGOs), civil society and entrepreneurs can accelerate clean energy projects. The involvement of private companies and new business models will complement international and national efforts. Regional grid interconnection should be strengthened.

Reinforce coordinated action from governments

High-level policies, enhanced coordination between ministries and clear allocation of responsibilities among implementing agencies are all essential to increase the pace of implementation of SDG7, while also attracting additional climate financing.

Attention should be paid to strengthening energy governance, building strong institutions, developing technological capacity – including technology and knowledge transfer – and reskilling human resources. Current NDCs should be enhanced to better align with the goals of the Paris Agreement. Net-zero emissions targets should be expanded beyond the current five Arab countries that have pledged to achieve economy-wide net-zero emissions by 2050 or 2060. Capacity building should be strengthened for relevant ministries, agencies and local governments, including training staff in climate finance-related matters.

ENDNOTES

[1] The Arab region here includes: the Maghreb (Algeria, Libya, Morocco, and Tunisia), the Mashreq (Egypt, Iraq, Jordan, Lebanon, the State of Palestine and the Syrian Arab Republic), the Gulf Cooperation Council countries (Bahrain, Kuwait, Oman, Qatar, the Kingdom of Saudi Arabia and the United Arab Emirates), and the least developed countries (LDCs) of Comoros, Djibouti, Mauritania, Somalia, the Sudan and Yemen.

[2] Five Arab countries have pledged to achieve economy-wide net-zero emissions: Oman and the United Arab Emirates are aiming to achieve this target by 2050 and Bahrain, Kuwait, and Saudi Arabia by 2060.

[3] Data provided to UN ESCWA by the World Bank, 2023.

[4] Data provided to UN ESCWA by the World Bank.

[5] Data provided to UN ESCWA by the World Bank.

[6] Data provided to UN ESCWA by the WHO, 2023.

[7] IRENA (2022), "Renewable Energy Statistics 2022", The International Renewable Energy Agency, Abu Dhabi, www.irena.org/publications/2022/Apr/Renewable-Capacity-Statistics-2022, accessed April 2023.

[8] APICORP (2022), "MENA's Sustainability Journey in Light of COP27", Arab Petroleum Investments Corporation, Dammam, www.apicorp.org/publication/menas-sustainability-journey-in-light-of-cop27/#, accessed April 2023.

[9] ESCWA (2022), "Potential blue and green hydrogen developments in the Arab region", United Nations Economic and Social Commission for Western Asia, Beirut, https://www.unescwa.org/sites/default/files/pubs/pdf/potential-blue-green-hydrogen-developments-arab-region-english.pdf, accessed April 2023.

[10] ECFR (2023), "Sunny side up: Maximising the European Green Deal's potential for North Africa and Europe", European Council on Foreign Relations, Berlin, https://ecfr.eu/publication/sunny-side-up-maximising-the-european-green-deals-potential-for-north-africa-and-europe/, accessed April 2023.

[11] IEA (2022), "Global Hydrogen Review 2022", International Energy Agency, Paris, https://iea.blob.core.windows.net/assets/c5bc75b1-9e4d-460d-9056-6e8e626a11c4/GlobalHydrogenReview2022.pdf, accessed April 2023.

[12] ACWA Power (2023), "NEOM Green Hydrogen Project", ACWA Power, Riyadh, https://acwapower.com/en/projects/neom-green-hydrogen-project/, accessed April 2023.

[13] Alkesh Sharma, "Infinity Power and Conjuncta to develop green hydrogen project in Mauritania," The National (9 March 2023), Abu Dhabi, www.thenationalnews.com/business/2023/03/09/infinity-power-and-conjuncta-to-develop-green-hydrogen-project-in-mauritania/, accessed April 2023.

[14] IEA, IRENA, UNSD, World Bank, WHO (2022), "Tracking SDG 7: The Energy Progress Report", World Bank, Washington DC, www.worldbank.org/en/topic/energy/publication/tracking-sdg-7-the-energy-progress-report-2022, accessed April 2023.

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